

REMARKS

Claims 41-57 and 81-106 are pending in this application. By this Amendment, claims 41, 50, 51, 53, 54, 57, 88, 91, 92, 97 and 103 are amended and claims 104-106 are added. Support for new claims 104-106 can be found in the original specification including the claims and figures, for example, see page 17, lines 3-11. Reconsideration in view of the above amendments and following remarks is respectfully requested.

1. Claims 41-54, 81-85, 88-94, 97, 98, 102 and 103 are Rejected Under 35 U.S.C. §103(a) over Mase et al. in view of Soane et al.

The Office Action rejects of claims 41-54, 81-85, 88-94, 97, 98, 102 and 103 under 35 U.S.C. 103 as allegedly being unpatentable over Mase *et al.* (U.S. Patent No. 5,693,366, hereinafter "Mase") in view of Soane *et al.* (U.S. Patent No. 5,733,483, hereinafter "Soane"). This rejection is respectfully traversed.

Claim 41 recites a method of forming a coated optical element, the method using a mould having first and second mould sections that will form front and back surfaces of the optical element, one of the mould sections having a casting face, the method including the steps of: applying a first coating layer to cover the casting face of a mould section, the casting face being capable of imparting a desired optical configuration on a surface of the optical element, wherein the first coating layer is an abrasion resistant coating layer comprising polysiloxane resin; treating the first coating layer to prevent damage to the first coating layer during subsequent steps; applying a second coating layer to the first coating layer to substantially cover the first coating layer; treating the second coating layer to provide at least weak adhesion of the second coating layer to the first coating layer and to prevent damage to the second layer during subsequent steps; filling the mould with an organic liquid material; and hardening the organic liquid material so as to form the optical element

adhered to the second coating layer, wherein the second coating layer is an intermediate coating layer comprising a (meth)acryl silane, and wherein the (meth)acryl silane, the organic liquid material and the abrasion resistant coating layer coreact to form the coated optical element.

Concerning Mase, the Office Action asserts that Mase discloses a method of forming a plastic lens, wherein the method includes providing a lens substrate coating the surface of the substrate with a primer layer, curing or drying the primer layer, coating the primer layer with a hard coat layer, i.e. abrasion resistant layer, curing the hard coat. See page 2 of the Office Action. However, the Office Action also admits that Mase does not disclose coating the layers onto a mould in the reverse order and after forming the coating layers, filling the mould with lens forming material and curing and forming the lens. The Office Action further asserts that coating the layers onto a mould in the reverse order and after forming the coating layers filling the mould with lens forming material and curing and forming the lens are well known and conventional as shown for example by Soane. However, neither Mase nor Soane disclose or suggest the combination of features of claim 41.

Specifically, Mase discloses providing a plastic lens substrate and coating it with a polyurethane primer layer with a siliconed resin thereon. See column 2, lines 32-56 and column 4, lines 22-24.

The problem to be solved by Mase is the impact resistance of plastic lenses having a hard coat and an anti-reflection coat (Col 1, lines 29-53). The primer layer of Mase is a thermoset polyurethane (Col 2, lines 24-25). More specifically, the thermoset polyurethane is formed by reaction of a blocked polyisocyanate and a polyol (Col 2, lines 53-56). Prior to coating with the blocked polyisocyanate and polyol, the lens is treated with an alkali (Col 7, lines 6-9) to enhance adhesion between the primer layer and the lens.

Notably, Mase discusses problems associated with the prior art use of thermoplastic polyurethane impact-resistant primer layers. Specifically, there is a possibility for a thermoplastic polyurethane layer to be dissolved out into the hard coat solution when it is applied to the polyurethane layer. Therefore, Mase confirms that there are considerable difficulties associated with the preparation of multi-layer coatings, as stated previously.

The primer layer of Mase is functionally and practically distinct from the intermediate coating layer recited in claim 41. As stated previously, claim 41 includes an intermediate coating layer comprising (meth)acryl silane, which is coreacted with organic liquid material and a polysiloxane resin abrasion resistant coating layer, wherein the intermediate coating layer provides at least weak adhesion between the organic liquid material and the abrasion resistant coating layer. In contrast, Mase is concerned with enhancing the impact resistance of a lens by using a primer layer. There is no suggestion or teaching in Mase that the primer layer enhances adhesion between the lens and the hard coat. As such, one of ordinary skill would not have been motivated to use (meth)acryl silane or any adhesive material per se because disclosure of Mase would be irrelevant to considerations of promoting adhesion between a lens and hard coat. Furthermore, there is no teaching or suggestion in Mase that the methods disclosed therein can be used in an in-mould coating process.

Soane fails to cure the deficiencies of Mase.

Soane discloses a method for applying a multi-layer coating to a lens using an in-mould coating process. Soane specifically addresses problems associated with having to tint hard coated lenses (Col 1, line 61-Col 2, line 4). Soane specifically discloses the use of a coupling agent layer 32. The coupling agent layer of Soane is used to couple a hard coat layer with an anti-reflection (AR) stack layer, which is contrary to claim 41 which includes an intermediate coating layer comprising

(meth)acryl silane adhered to a second coating layer and applied to the first coating layer. Rather, Soane's AR layers are composed of a stack of inorganic layers. The coupling layer disclosed in Soane is a (meth)acryl silane (Col 6, lines 21-22), however, as mentioned above, is not coated onto a polysiloxane resin first coating layer and adhered to an organic liquid material. See claim 41. Therefore, even though Soane's coupling agent layer 32 is a (meth)acryl silane, Soane's (meth)acryl silane does not coreact with an organic liquid material and an abrasion resistant coating layer to form a coated optical element, because the coupling agent layer 32 is between a stack of inorganic layers and a hard coat layer.

Soane uses a hard coat that is organic based (Col 6, line 61-Col 7, line 40). Soane describes a typical in-mould coating insofar as it describes an organic hard coat that is formed directly on the lens substrate. Soane does not mention the use of polysiloxane coatings (ie. non-organic coatings) and, as a result, it does not contemplate the problems that may be encountered with the use of polysiloxane coatings in an in-mould coating process and therefore it does not teach how such problems may be overcome. Indeed, there is no teaching nor suggestion whatsoever in Soane that a (meth)acryl silane can be used to promote adhesion between a hard coat and a lens substrate. Soane specifically addresses the issue of coupling an organic hard coat with an inorganic dielectric AR stack layer. Chemically this is very different to coupling a silane hard coat with a lens substrate material. In no way does Soane contribute to helping to overcome the problem of adhesion between a polysiloxane hard coating and a substrate in an in-mould coating process. Therefore there is nothing in Soane that would motivate a skilled person to form a (meth)acryl silane between a bulk lens material and a siloxane hard coat.

From the above discussion, it is clear that even given motivation to combine Mase and Soane, the combination does not disclose all of the features of amended Claim 41. No matter how Mase and Soane are combined, the skilled person simply

would not have been able to extract all of the features of claim 41, even if there were motivation to do so.

Without the benefit of hindsight, a person skilled in the art, faced with the problem discussed, would not be motivated to combine parts of Mase and Soane to arrive at a solution that is the present invention as claimed. The combination is made easier with the benefit of hindsight by distilling the integers of the presently claimed invention from the prior art. Applicants remind the Examiner that a "rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art. In making this evaluation, all facts must be considered. The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis. To the extent the Patent Office rulings are so supported, there is no basis for resolving doubts against their correctness. Likewise, we may not resolve doubts in favor of the Patent Office determination when there are deficiencies in the record as to the necessary factual bases supporting its legal conclusion of obviousness." In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968) (emphases in original).

Moreover, in the absence of a combination of Mase and Soane disclosing all of the features of claim 41, Applicants request that the Examiner provides evidence of why the proposed modification of Mase in view of Soane would have been desirable, given the problem of trying to adhere a polysiloxane hard coat to a lens in an in-mould coating process.

Thus, for at least the reasons set forth above, Applicants respectfully submit that claim 41 is allowable. Claims 42-54, 81-85, 88-94, 97, 98, 102 and 103 depend from claim 41, and are allowable for at least the same reasons as claim 41. Withdrawal of the rejection is respectfully requested.

2. Claims 50-57 Are Rejected Under 35 U.S.C. §103(a) over Mase and Soane In Further View of LaLiberte et al.

The Office Action rejects claims 50-57 under 35 U.S.C. §103(a) over Mase and Soane in further view of LaLiberte et al (U.S. Patent No. 4,273,809, hereinafter "LaLiberte"). The rejection is respectfully traversed.

Applicants respectfully submit that claims 55-57 depend from claim 41, and that Mase and Soane do not disclose or suggest the features of claim 41, therefore Mase and Soane fail to disclose or suggest all the features of their dependent claims 55-57. LaLiberte fails to cure the deficiencies. LaLiberte discloses cast resin lenses, which are removed from casting moulds early in a cure cycle, are coated for protection against exposure to oxygen to provide increased post cure surface polymerization and abrasion resistance. See abstract. However, LaLiberte, in combination with Soane and Mase, fails to disclose or suggest the combination of features of claim 41, including at least the feature of hardening an organic liquid material so as to form an optical element adhered to a second coating layer, wherein the second coating layer is an intermediate coating layer comprising a (meth)acryl silane, and wherein the (meth)acryl silane, the organic liquid material and the abrasion resistant coating layer (comprising polysiloxane resin) coreact to form a coated optical element.

For at least the reasons set forth above, Applicants respectfully submit that claims 55-57 depend from claim 41 and are allowable for at least the reasons set forth above with respect to claim 41. Withdrawal of the rejection is respectfully requested.

3. Claims 86, 87, 95 and 98 Are Rejected Under 35 U.S.C. §103(a) over Mase In View of Soane In Further View of Singh et al.

The Office Action rejects claims 86, 87, 95 and 98 under 35 U.S.C. §103(a) over Mase and Soane in further view of Singh et al (U.S. Patent No. 5,204,126, hereinafter "Singh"). The rejection is respectfully traversed.

Claims 86, 87, 95 and 98 depend from claim 41, and are allowable over Mase and Soane for at least the reasons set forth above. Singh fails to cure the deficiencies of Mase and Soane. Singh discloses ultra thin release films which can be used on inner surfaces of moulds used for casting optical lenses of plastic materials. See Abstract and Col. 6, line 65 to Col. 7, line 2. However, Singh in combination with Soane and Mase, fails to disclose or suggest the combination of claims of claim 41 including at least the feature of hardening an organic liquid material so as to form an optical element adhered to a second coating layer, wherein the second coating layer is an intermediate coating layer comprising a (meth)acryl silane, and wherein the (meth)acryl silane, the organic liquid material and the abrasion resistant coating layer (comprising polysiloxane resin) coreact to form a coated optical element.

For at least the reasons set forth above, Applicants respectfully submit that claims 86, 87, 95 and 98 are allowable for at least the same reasons as claim 41. Withdrawal of the rejection is respectfully requested.

4. Claims 99-101 Are Rejected Under 35 U.S.C. §103(a) over Mase In View of Soane In Further View of Takamizawa et al.

The Office Action rejects claims 99-101 under 35 U.S.C. §103(a) over Mase in view of Soane in further view of Takamizawa et al (U.S. Patent No. 5,096,626, hereinafter "Takamizawa"). The rejection is respectfully traversed.

Applicants submit that for at least the reasons set forth above with respect to claim 41, from which claims 99-100 depend, that Mase and Soane fail to disclose or suggest the combination of features of claim 41. Takamizawa fails to cure these deficiencies. Takamizawa discloses a plastic lens having a hard coat film and/or anti-reflecting film strongly adhered and having no defects. See Abstract. Further, Takamizawa discloses producing a plastic lens by forming an anti-reflective film and/or a hard coat film on working surfaces of a pair of moulds, pouring a monomer liquid into the space between said moulds at a ring casket and polymerizing the monomer therein. See Abstract. However, Takamizawa in combination with Mase and Soane, fail to disclose or suggest the combination of features of claim 41, for at least the reasons set forth above, claims 99-101 depend from claim 41 and are allowable for at least the same reasons that claim 41 is allowable. Withdrawal of the rejection is respectfully requested.

5. New Claims

By its amendment, claims 104-106 have been added. Applicants respectfully submit that claims 104 is allowable, as the cited references fail to disclose or suggest the combination of features including a method of forming a coated optical element, the method using a mould having first and second mould sections that will form front and back surfaces of the optical element, one of the mould sections having a casting face, the method including the steps of: applying a first coating layer to cover the casting face of a mould section, the casting face being capable of imparting a desired optical configuration on a surface of the optical element; treating the first coating layer to prevent damage to the first coating layer during subsequent steps; applying a second coating layer to the first coating layer to substantially cover the first coating layer; treating the second coating layer to provide at least weak adhesion of the second coating layer to the first coating layer and to prevent damage to the second layer during subsequent steps; filling the mould with an organic liquid material; and hardening the organic liquid material so as to form the optical element adhered to the second coating layer, wherein the hardening comprises coreacting

the intermediate coating layer, the organic liquid material and the abrasion resistance coating layer, and wherein the intermediate coating layer is between and in contact with the organic liquid material and the abrasion resistant layer to provide adhesion between the organic liquid material and the abrasion resistant layer.

Claims 105 and 106 depend from claim 104, and are allowable for at least the same reasons that claim 104 is allowable. Allowance of the newly added claims is hereby requested.

6. Conclusion

In light of the foregoing, reconsideration and allowance of the present application are respectfully requested. Should any residual issues arise, the Examiner is asked to contact the undersigned at the number listed below.

Respectfully submitted,

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